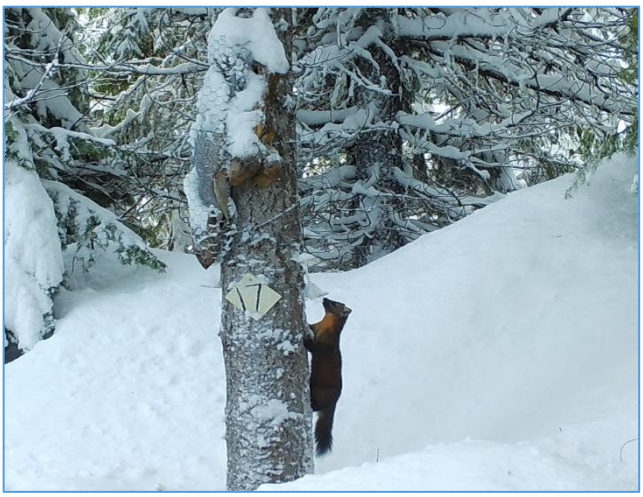
Nez Perce-Clearwater National Forests
Multispecies Mesocarnivore Surveys
2018

Final Draft Completed on March 6, 2019



Contributors:

Jessie Golding, Carnivore Research Associate, Rocky Mountain Research Station, Missoula, MT
John Squires, Wildlife Research Biologist, Rocky Mountain Research Station, Missoula, MT
Michael Schwartz, Research Ecologist, Rocky Mountain Research Station, Missoula, MT
Mike Pruss, Wildlife Program Manager, Nez Perce-Clearwater National Forests, Kamiah, ID
Jim Lutes, Forest Biologist, Nez Perce-Clearwater National Forests, Kamiah, ID
Alyssa Fellow, North Zone Biologist, Nez Perce-Clearwater National Forests, Orofino, ID
Glen Gill, Central Zone Biologist, Nez Perce-Clearwater National Forests, Kooskia, ID
Lyn Snoddy, South Zone Biologist, Nez Perce-Clearwater National Forests, Grangeville, ID
Dan Fowlds, Survey Crew, Nez Perce-Clearwater National Forests, Kooskia, ID.
Keldon Martin, Survey Crew, Nez Perce-Clearwater National Forests, Kooskia, ID.
Lisa Lochner, Survey Crew, Nez Perce-Clearwater National Forests, Grangeville, ID.
Sean Santolin, Survey Crew, Nez Perce-Clearwater National Forests, Grangeville, ID.

INTRODUCTION

In January 2017 through March 2018, a multi-species meso-carnivore survey was conducted throughout the Nez Perce-Clearwater National Forests (NPCLNF), Idaho, with the exclusion of wilderness and roadless areas. The surveys consisted of snow-track surveys for Canada lynx (*Lynx canadensis*) and passive hair snare/camera stations for North American wolverine (*Gulo gulo luscus*), fisher (*Pekania pennanti*) American marten (*Martes americana*), and montane red fox (*Vulpes vulpes macroura*). The surveys were conducted by the Nez Perce-Clearwater National Forest in collaboration with the USFS Rocky Mountain Research Station (RMRS) in Missoula, MT.

PRIMARY SPECIES

Canada lynx

Lynx are one of the most high-profile mesocarnivores that occur on USFS lands in the Northern Rocky Mountains (NRM). They were selected as a primary species for this survey effort principally because they are protected under the ESA, and ongoing litigation concerns related to proposed management actions. Not only are lynx the center of many legal challenges brought against the USFS, but because of its status as Threatened under the ESA (since 2000), it is addressed in almost every planning document for the USFS in the Plan Area. Secondarily, there are inconsistencies in the status of lynx on the Nez Perce National Forest side of the Nez Perce-Clearwater National Forests (hereafter Nez Perce National Forest or NPNF). The NPNF is labeled as unoccupied in the Northern Rockies Lynx Management Direction (USDA Forest Service 2007), yet there are historical and anecdotal observations of lynx. The anecdotal observations of lynx have not been verified and could easily be confused for bobcats. Previous lynx track surveys were conducted by the RMRS in 2007 and 2013 with no lynx being detected (Ulizio et al. 2007, Stone et al. 2013). The NPNF conducted its own Canada lynx winter snow track surveys (also included two camera/hair snare locations at sites of recent reported lynx observations) in 2015. No lynx tracks, images, or DNA samples were documented (Snyder 2015) however there was an unexpected image of a wolverine captured at one location.

North American Wolverine

On February 4, 2013, FWS issued a proposed rule concerning the Distinct Population Segment of the wolverine that occurs in the contiguous United States. In their rulemakings, the FWS proposed to list the wolverine as a Threatened species under the Endangered Species Act (ESA). On August 13, 2014 the U.S. Fish and Wildlife Service withdrew this proposed rule however the rule was reinstated in May of 2016. Due to the recent proposed rules, the NPNF and RMRS biologists determined that it would also be important to survey for wolverine. Similar to lynx, there have been recent reports of wolverines within the NPCLNF. Camera/hair snare stations captures positive images and DNA samples of a wolverine on the NPNF in 2015 (passive hair snare/camera station as established to two sites of recent lynx observations – see Canada lynx above). In December 2016 through March 2017 the Western States Wolverine Conservation Project established 14 camera/hair snare trap son the NPCLNF resulting in wolverine images and DNA samples of two wolverines at three sites (one male wolverine image/DNA sample was captured at two adjacent sites approximately 7.5 miles apart).

Fisher

The NRM population of fisher was petitioned for listing under the ESA in both 2009 and 2013. In 2011, the USFWS determined that the listing petitioned in 2009 of the NRM population was not warranted. In 2016, the USFWS determined that the listing petitioned in 2013 may be warranted due to factors B (overutilization) and E (other manmade factors). The USFWS recently completed a species status assessment (SSA) (USFWS 2017). In 2017, and based on the based on the SSA, the USFWS did not find that the listing of the NRM population of fisher was warranted.

The fisher is listed as a "critically imperiled" species under Idaho's Comprehensive Wildlife Conservation Strategy (CWCS), are regarded as a sensitive species within the US Forest Service Northern Region (R1), and a management indicator species on the NPNF. Fisher was designated as a management indicator species to represent wildlife species that are dependent on old growth forest. Fisher have been extensively studied on the Forest since 2004. The Regional Martes Database indicates that of approximately 1,365 sampling locations (DNA hair snare and live traps) between 2004 and 2015 there have been 164 positive fisher observations (DNA samples or in hand observations).

SECONDARY SPECIES

American marten

The marten is not a sensitive species for the US Forest Service Northern Region, but is a management indicator species for the NPNF. Marten is listed as "secure" under the CWCS for both statewide and range-wide rankings and is managed by IDFG as a furbearing species. Marten were selected as a secondary species because of management concerns in some local areas and their potential to provide information about the community of carnivores. Marten are considered an MIS on the NPCLNF.

Mountain red fox

Mountain red fox are neither a sensitive nor MIS species on the NPCLNF. Mountain red fox were selected as a secondary species because little is known about the subspecies' overall distribution, including distribution in the NRM. The mountain red fox is a native subspecies of red fox that is descended from one of two native red fox lineages of North America (Aubry et al. 2009). These lineages

are distinct from the European red fox, which was introduced through intentional introductions, fur farms, or habitat expansions, and now occupies lower elevation habitats in the contiguous US (Aubry et al. 2009). The forest has not previously conducted targeted monitoring for mountain red fox.

METHODS

Survey methods applied are outlined in a draft multi-regional monitoring approach (Golding et al. 2017) and finalized in Golding et al. (2018). In this monitoring framework there are two types of information required: detection/non-detection information and individual identification. Genetic sampling from non-invasive survey methods can provide both of those pieces of information. In addition, identification reliability is high with genetic methods, which is particularly important for rare species. Therefore, for this strategy the protocol was to use two non-invasive survey methods to collect genetic samples:

1. Snow tracking (Squires et al. 2004)
2. Multispecies bait station

Snow tracking in combination with multispecies bait station setups and the NPNF, as multispecies bait stations are more efficient for detecting a broad suite of species.

Multi-species passive camera/hair snare bait stations alone were deployed on the CLNF.

Lynx

The protocol for snow-track surveys was developed by the RMRS after a decade or more of conducting winter track surveys for rare carnivores in western Montana. The snow-track survey protocol has undergone peer review and extensive testing in order to provide an accurate means of determining the presence or absence of a rare carnivore species in a survey area (Squires et al. 2004, McKelvey et al. 2006, Ulizio et al. 2006, Squires et al. 2012). We followed the same survey routes as the 2007, 2013, and 2015 snow-track survey in order to re-survey the predicted habitat, which would improve detection probability. Surveys were done via snowmobile traveling at 15-35km/hr on forest roads within grids that excluded wilderness and roadless areas. Snow within and around potential lynx tracks would be collected to obtain suitable genetic material for eDNA sampling to be conducted by the RMRS Wildlife Genetics Laboratory in order to accurately identify species.

Wolverine, Fisher, Marten, and Mountain Red Fox

We followed the U.S. Rocky Mountain Fisher Survey Protocol (Schwartz et al. 2006) and deployed 43 passive camera/hair snare across accessible portions of the Forest. Because of a lack or road kill carcasses the sites were baited using skinned cow forelegs and hooves and/or steelhead acquired from the Dworshak Fish Hatchery. Gusto was used as a scent lure that was applied to a sponge and hung from a nearby tree limb outside of each snare. Gun brushed were mounted on bait trees below the bait in an attempt to capture hair and DNR data. We used Bushnell Trophy Cam HD trail cameras to capture images as species as they approached and took bait. All hair samples were submitted to the RMRS Wildlife Genetics Laboratory in order to accurately identify species.

RESULTS

Primary Species

Lynx

Snow-track surveys provided no evidence of lynx on survey routes within the Nez Perce National Forest. As with previous surveys we followed the lynx habitat model developed by Ulizio et al. (2007) and conducted surveys in areas that contained high probability lynx habitat. The majority of the routes were surveyed only once during the 2018 field season, with approximately 620km of roads being surveyed. Poor habitat, access issues, snow conditions limited access to approximately 182 km of routes.
No lynx tracks were located.

Wolverine

Of the 43 passive camera/hair snare sites that were established, four were deployed in modeled wolverine habitat. We captured one image and potential genetic samples (hair) of a wolverine at one passive camera/hair snare location. This location was remote and inaccessible until late spring. The image was of a single animal captured on a single day in late June despite 171 camera days (2/2/2018-7/24/2018).

Fisher

Thirty-nine passive camera/hair snare sites were deployed in modeled fisher habitat. We captured a single image and potential genetic sample (hair) at one passive camera/hair snare location.

Secondary Species

Marten

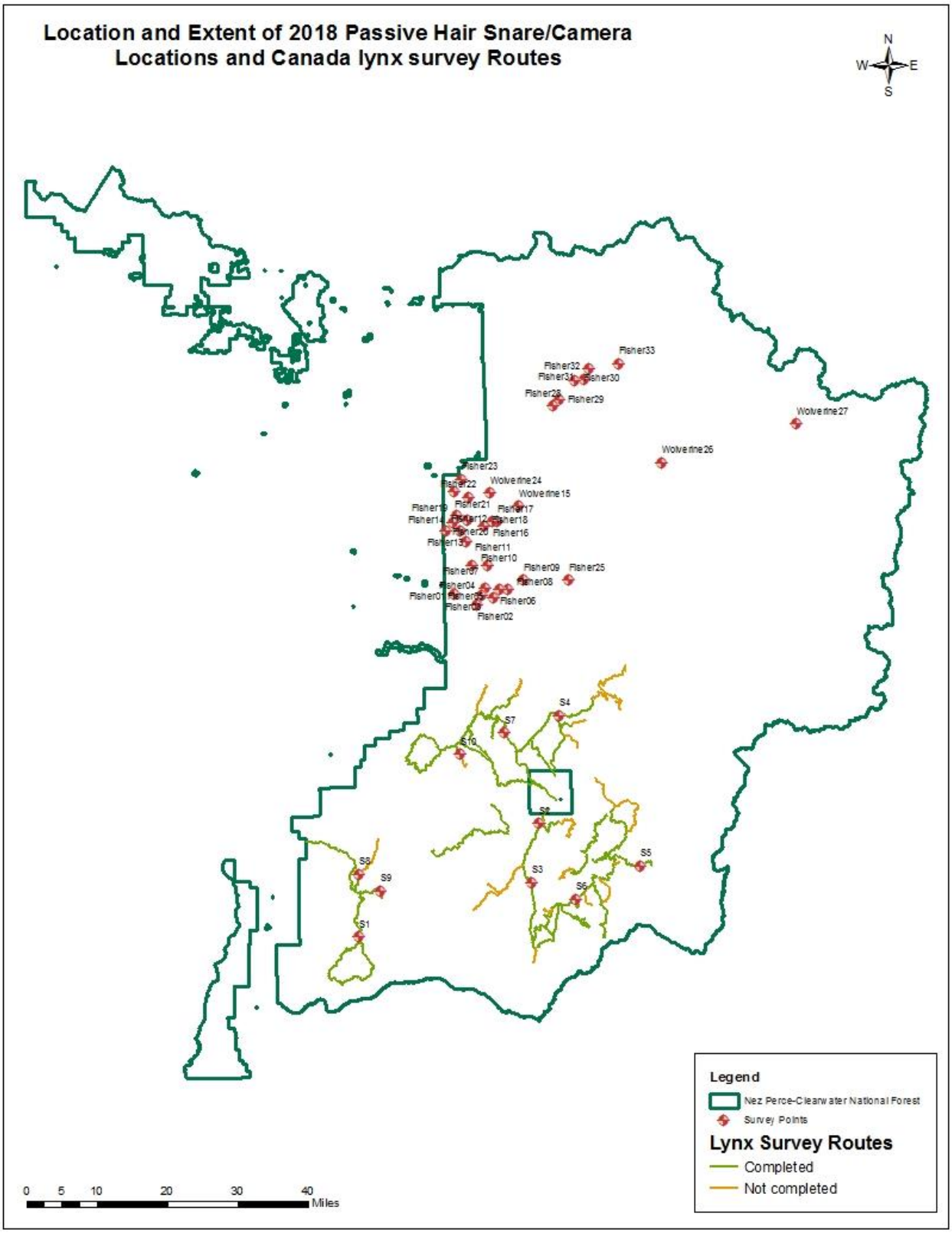
Marten by far were the most prevalent species to visit the bait sites. We captured images of marten at 19 of the 43 cameras deployed in both wolverine and fisher habitat.

Mountain red fox

We captured mountain red fox at 6 locations. Most fox were documented in higher elevation habitats more suitable to wolverine than fisher.

The results of DNR from hair samples have not been completed yet.

Other species documented included pine squirrel, northern flying squirrel, ermine, coyote, moose, white-tailed deer, gray jay, snowshoe hare, bobcat, and wolf.


Location and Extent of 2018 Passive Hair Snare/Camera Locations and Canada lynx survey Routes
N
W
E
S
Fisher33
Fisher32
Fisher31
Fisher30
Fisher28
Fisher29
Wolverine27
Wolverine26
Fisher23
Fisher22
Wolverine24
Wolverine15
Fisher21
Fisher19
Fisher17
Fisher14
Fisher12
Fisher18
Fisher20
Fisher16
Fisher13
Fisher11
Fisher10
Fisher07
Fisher09
Fisher25
Fisher04
Fisher08
Fisher01
Fisher06
Fisher02
S4
S7
S10
S8
S5
S3
S6
S9
S1
0 5 10 20 30 40
Miles
Legend
Nez Perce-Clearwater National Forest
Survey Points
Lynx Survey Routes
Completed
Not completed

Camera	Setup Date	Check Date	Take-down Date	Camera Days	Lynx	Wolverine	Fisher	Marten	Fox	Snowshoe	Bobcat	Wolf
NPCFISHER1	16-Jan	5-Feb	21-Feb	35	N	N	N	N	N	N	N	N
NPCFISHER2	16-Jan	5-Feb	21-Feb	35	N	N	N	Y	N	N	Y	N
NPCFISHER3	16-Jan	6-Feb	21-Feb	35	N	N	N	N	N	Y	N	N
NPCFISHER4	16-Jan	6-Feb	21-Feb	35	N	N	N	Y	N	N	N	
NPCFISHER5	17-Jan	6-Feb	8-Mar	50	N	N	Y	N	N	Y	N	N
NPCFISHER6	17-Jan	6-Feb	8-Mar	50	N	N	N	Y	N	N	N	N
NPCFISHER7	17-Jan	7-Feb	22-Feb	35	N	N	N	Y	N	N	N	N
NPCFISHER8	18-Jan	7-Feb	22-Feb	34	N	N	N	N	N	Y	N	N
NPCFISHER9	18-Jan	7-Feb	22-Feb	34	N	N	N	N	N	Y	N	N
NPCFISHER10	19-Jan	7-Feb	6-Mar	45	N	N	N	N	N	N	N	N
NPCFISHER11	19-Jan	8-Feb	6-Mar	45	N	N	N	N	N	Y	N	N
NPCFISHER12	19-Jan	8-Feb	26-Feb	38	N	N	N	Y	N	N	N	N
NPCFISHER13	23-Jan	8-Feb	26-Feb	33	N	N	N	N	N	N	N	N
NPCFISHER14	23-Jan	8-Feb	27-Feb	34	N	N	N	N	N	N	N	N
NPCWOLVERINE15	24-Jan	9-Feb	7-Mar	42	N	N	N	Y	Y	Y	N	N
NPCFISHER16	9-Feb	9-Feb	7-Mar	25	N	N	N	Y	N	Y	N	N
NPCFISHER17	25-Jan	9-Feb	7-Mar	40	N	N	N	Y	N	Y	N	N
NPCFISHER18	25-Jan	9-Feb	7-Mar	40	N	N	N	Y	N	Y	N	N
NPCFISHER19	26-Jan	15-Feb	27-Feb	31	N	N	N	N	N	Y	Y	N
NPCFISHER20	26-Jan	15-Feb	1-Mar	33	N	N	N	N	N	Y	N	N
NPCFISHER21	29-Jan	16-Feb	12-Mar	41	N	N	N	N	N	Y	N	N
NPCFISHER22	29-Jan	16-Feb	9-Mar	38	N	N	N	Y	N	Y	N	N
NPCFISHER23	29-Jan	16-Feb	9-Mar	38	N	N	N	Y	N	N	N	N
NPCWOLVERINE24	30-Jan	15-Feb	5-Mar	33	N	N	N	N	N	N	N	N
NPCFISHER25	31-Jan	20-Feb	14-Mar	41	N	N	N	Y	N	N	N	N
NPCWOLVERINE26	1-Feb		24-Jul	172	N	N	N	N	N	N	N	N

NPCWOLVERINE27	2-Feb		24-Jul	171	N	Y	N	Y	Y	Y	N	N
NPCFISHER28	13-Feb		12-Mar	26	N	N	N	Y	N	N	N	N
NPCFISHER29	13-Feb		13-Mar	27	N	N	N	N	N	N	N	N
NPCFISHER30	13-Feb		13-Mar	27	N	N	N	N	N	N	Y	Y
NPCFISHER31	13-Feb		13-Mar	27	N	N	N	N	N	Y	Y	Y
NPCFISHER32	13-Feb		13-Mar	27	N	N	N	N	N	N	N	N
NPCFISHER33	14-Feb		12-Mar	25	N	N	N	Y	N	N	N	N
NPCLWS1	19-Jan		6-Mar	45	N	N	N	N	Y	N	N	N
NPCLWS2	24-Jan		26-Feb	32	N	N	N	N	N	N	N	N
NPCLWS3	24-Jan		26-Feb	32	N	N	N	N	N	N	N	N
NPCLWS4	25-Jan		1-Mar	34	N	N	N	Y	N	Y	N	N
NPCLWS5	30-Jan		7-Mar	35	N	N	N	Y	Y	N	N	N
NPCLWS6	30-Jan		7-Mar	35	N	N	N	Y	Y	N	N	N
NPCLWS7	31-Jan		13-Mar	40	N	N	N	Y	Y	Y	N	Y
NPCLWS8	6-Feb		12-Mar	33	N	N	N	N	N	Y	N	N
NPCLWS9	6-Feb		6-Mar	27	N	N	N	N	N	N	N	N
NPCLWS10	14-Feb		8-Mar	21	N	N	N	N	N	N	N	N

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